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ABSTRACT

This learning module, which is part of a management and supervisor training program for managers and supervisors employed at the Department of Energy's Waste Isolation Division, is designed to prepare trainees to promote and monitor the industrial safety program at their plant. The following topics are covered in the module's individual sections: regulatory requirements; safety and accountability; manager and supervisor responsibilities; landlord responsibilities; fire protection; subcontracts and safety; accident prevention; incident reporting requirements; procedures for analyzing tasks for hazards; electrical safety; hazardous materials; housekeeping; work in high places or confined spaces; safety meetings; procedures for monitoring a safety program; and safety goals. Each section includes some or all of the following: enabling objectives, an exercise requiring trainees to evaluate a manager's effectiveness in a given scenario, and lists of good practices and practices to avoid. Concluding the module are a list of "smart moves," 14-item reference list, practice test, and test answers. Appended is a sample workplace safety inspection checklist. (MN)

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ED 395 163

Waste Isolation Division (WID)
Management and Supervisor Training (MAST) Program

INDUSTRIAL SAFETY

MAS-123

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A. INTRODUCTION

Terminal Objective

Upon completion of this module, the trainee will be able to promote and monitor the industrial safety program at the WIPP.

Mastery of the terminal objective will be demonstrated by scoring 80 percent or higher on the module examination.

Safety is your number one priority. One of the most significant contributions that you can make to plant safety is leadership by example. How you regard safety rules has a direct effect on how well safety rules are followed by your employees. As a manager or supervisor, you are responsible for seeing that assigned work is accomplished; that your customer's needs are met. Just as important as getting the job done right is ensuring that the job is done safely.

The WID accident rate is low. A recently reported rate was 1.6 accidents per 200,000 hours worked, compared with a rate of 8.7 for general industry nationwide and a rate of 3.6 for Department of Energy (DOE) facilities. To keep the rate low, we must continue to champion safe work practices and attitudes.

Industrial safety is as important in non-plant areas of the WIPP as it is in plant areas. Here are some examples of accidents that involved employees from sections not normally associated with work in plant areas:

- Employee slipped, causing back strain
- Employee inhaled fumes from cleaner
- Employee diagnosed with Carpel Tunnel Syndrome
- Employee stapled finger
- Employee fell in parking lot, strained muscle

Even if your employees work only in office areas, you need to know and promote good safety practices.

Module Overview

- Regulatory Requirements. Several agencies other than the DOE have a say in safety practices at the WIPP. Where to find WID industrial safety procedures.

- Safety and Accountability. Accidents can affect WID's cost-plus award fee.

- Manager and Supervisor Responsibilities. Specific safety duties and how to discharge them.

- Landlord Responsibilities. Good safety practices for landlords at the WIPP.

- Fire Protection. Fire safety goes well beyond conducting an occasional fire drill. Useful information about fire protection and fire suppression systems at the WIPP.

- Subcontracts and Safety. Good practices for controlling the safety of subcontract employees.

- What You Can Do to Prevent Accidents. How to stop an accident before it happens. Looking out for hazards.

- Incident Reporting Requirements. An employee is injured. What do you do? How to investigate an accident or a near-miss.

- How to Analyze Tasks for Hazards. Methods for defining and controlling on-the-job hazards.

- Electrical Safety. Rules of electrical safety that managers and supervisors should know.

- Hazardous Materials. How to see that chemicals are used safely in your work area.

- Housekeeping. Good housekeeping is a key to safe operation. Good housekeeping practices.

- Work in High Places or Confined Spaces. Extra precautions are required for working on ladders, scaffolds, and in confined spaces.

- Safety Meetings. Good practices for conducting safety meetings. How to conduct a safety meeting, even if you've never held one before.

- Monitoring the Safety Program. Periodic inspections. Safety committees. How to address employee safety concerns.

- Safety Goals. Good practices for meeting safety objectives in your areas of responsibility.

B. REGULATORY REQUIREMENTS

Enabling Objectives

Upon completion of this section, the trainee will be able to perform the following:

1. Identify regulatory agencies whose requirements must be met by the WID industrial safety program.
2. Identify the role of the DOE in the WID industrial safety program.
3. Identify WID policies and procedures for industrial safety.
4. Given a scenario, evaluate the manager's knowledge of the impact of regulatory agencies on the WID safety program.

In private industries, employers are required to meet workplace safety and health standards under the Occupational Safety and Health Act of 1970. The purpose of the act is to ensure safe and healthful working conditions for the nation's workers. The act covers more than 60 million employees in five million workplaces.

The Occupational Safety and Health Administration (OSHA) has the following powers, among others:

- Enforcement of the act's requirements

  This includes requiring employers to keep records of safety and health data.
- Investigation of fatalities and catastrophes
- Investigation of complaints
- Inspection of workplaces
- Issuance of citations
- Issuance of standards
- Education of employers and employees

The WIPP and other DOE sites are not covered directly by the act. However, the DOE has adopted OSHA standards under DOE Order 5483.1A, "Occupational Safety and Health Program for DOE Contractor Employees at Government-Owned Contractor-Operated Facilities." The DOE performs workplace inspections and enforces OSHA standards at DOE sites.

The WIPP also must meet federal and state mine safety and health requirements. The Land Withdrawal Act directs the Mine Safety and Health Administration (MSHA) to inspect the WIPP in the same manner in which mine sites are evaluated under the Federal Mine Safety and Health Act. These inspections are performed at least four times a year. Results are forwarded to the Secretary of Energy.

Safety and health standards for MSHA are similar to those of OSHA, with further requirements for tunneling and other mine-specific activities.

The WIPP is also inspected by the New Mexico State Inspector of Mines. State standards, which are found in the Mine Safety Code for All Mines, are about equal to the federal standards.

The WID safety policy and industrial safety procedures are found in WP 12-1, WIPP Safety Manual, which implements required standards.

Also associated with required standards are the following:

DOE 5480.8, "Contractor Occupational Medical Program"
DOE 5480.10, "Contractor Industrial Hygiene Program"
DOE 5480.7A, "Fire Protection"
DOE 5480.9, "Construction Safety and Health Program"
DOE 5483.1A, "Occupational Safety and Health Program for DOE Contractor Employees at Government-Owned Contractor-Operated Facilities"

Industrial Safety personnel at the WIPP work with managers and supervisors to ensure that safety and health standards are met. Manager/supervisor responsibilities include:

- Following and enforcing WID safety procedures and policies
- Informing employees of their safety rights
- Investigating and reporting incidents and injuries

For additional information on OSHA and MSHA, see MAS-113, Regulatory Organizations and Their Requirements.

C. SAFETY AND ACCOUNTABILITY

Enabling Objectives

Upon completion of this section, the trainee will be able to perform the following:

1. Identify how safety affects WID accountability.
2. Identify the hidden costs of accidents and the hidden savings of accident avoidance.
3. Given a scenario, evaluate the manager's effectiveness concerning safety and accountability.

There are moral, financial, legal, and personal reasons for maintaining your workplace as safe as reasonably possible. For moral reasons, you want your employees to remain free of harm. The DOE has established financial reasons for the WID to minimize accidents. And, as a manager or supervisor, you can be held personally and criminally liable for an employee accident. Not only can you be sued, you can be jailed.

Accident costs affect the WID's performance-based award fee. If the cost of an accident is determined to be avoidable, that cost is subtracted from the WID's cost-plus award fee. Under the rules for accountability, the WID is rewarded for excellent performance and held accountable for unsatisfactory performance.

Avoidable costs include direct costs incurred by the WID or its subcontractors as a result of negligence or willful misconduct. This can include the cost of:

- Replacing accident-damaged equipment
- Litigation and claims brought by an injured employee
- Insurance premium increases attributable to the accident
- Cleaning up a hazardous material spill associated with an accident
- Fines and penalties resulting from violation of applicable laws and regulations, including failure to comply.

Examples of negligence or willful misconduct include knowingly violating a procedure, failing to exercise a reasonable degree of care, and failing to heed legal or regulatory requirements.

Negligence is the failure to exercise the standard of care that a reasonable and prudent person would exercise in an identical or similar environment. Willful misconduct is the knowing failure to exercise this standard of care.

Liability for employee accidents is not restricted to the employer. Supervisors and managers can be held personally and criminally liable for fines of tens of thousands of dollars for violation of certain laws or regulations. Imprisonment is possible.

Safety incidents can also play a role in your performance evaluation as a manager or supervisor.

Hidden Costs of Accidents

What are the real costs of accidents? Obvious costs include medical bills, rehabilitation expenses, and increased insurance premiums. Other costs are less obvious. These include disruption of the workplace when employees stop to help the injured (or watch as others help) and loss of the injured employee's output. Here are some other hidden costs:

- Time lost from work by the injured
- Loss of efficiency due to breakup of crew
- Loss of time required to handle and investigate the accident
- Loss of efficiency while breaking in new worker
- Economic loss to injured worker's family
- Damage to tools and equipment
- Loss of productivity while equipment is out of service
- Failure to meet customer needs
- Overhead costs during work disruption

These indirect costs usually are greater than the direct costs of an accident.

Hidden Savings of Accident Prevention

Every accident that you prevent saves direct and indirect accident costs. Consider the benefits of avoiding accidents:

- Your employees will not be injured or killed
- You will have more time for other management/supervisory duties
- Production will flow more smoothly
- Equipment and materials remain free of damage
- The WID cost-plus award fee is greater
- Your customer's needs can more easily be met
- WID credibility is enhanced
- Your performance evaluation is enhanced

D. MANAGER AND SUPERVISOR RESPONSIBILITIES

Enabling Objectives

Upon completion of this section, the trainee will be able to perform the following:

1. Identify manager and supervisor responsibilities for industrial safety.
2. Identify employee responsibilities for industrial safety.
3. Given a scenario, evaluate the manager's effectiveness concerning safety responsibilities.

Managers and supervisors carry the most responsibility for safety. In other sections of this module, methods for preventing accidents and eliminating hazards are discussed. This section details the manager and supervisor responsibilities specified in WP 12-1, WIPP Safety Manual. You should become as familiar with this manual as you are with the procedures used in your workplace, even if you seldom wear a hard hat or safety glasses. Safety issues are not limited to Engineering, Operations, and Maintenance. Office workers face trip hazards (open drawers), electrical hazards (computer power, lighting), and chemical hazards (toner for printers and photocopiers).

How you discharge your safety responsibilities is a critical item on your performance evaluation. Under the Performance Management System, you are appraised on how well you establish and support methods that allow your employees to perform their jobs in a safe, healthful, and environmentally sound manner.

Environment, Safety, and Health

Environment, Safety, and Health (ES&H) is responsible for:

- Formulating safety and health programs
- Administering safety and health programs
- Auditing those programs

As a manager or supervisor, you should look to ES&H for

assistance in creating and maintaining a safe workplace. Safety personnel evaluate compliance with safety requirements through both scheduled and unannounced inspections of work areas.

Manager/Supervisor Responsibilities

Managers and supervisors are responsible for ensuring that safety is given the same emphasis as producing a product or providing a service. This includes:

- Seeing that your employees are trained to work safely
- Monitoring employees' work
- Correcting unsafe behavior and unsafe conditions
- Enforcing safety rules
- Investigating incidents and accidents
- Ensuring that your employees understand that safety measures are required, not optional

Employee Responsibilities

Each employee is responsible for conducting work in a safe manner. This includes:

- Knowing and complying with health and safety rules
- Using protective devices provided for equipment, tools, and processes
- Wearing personal protective equipment as appropriate
- Following procedures, safe practices, and safety rules to prevent injury or equipment damage
- Contributing suggestions for preventing accidents
- Reporting accidents and near accidents

Each employee is also responsible for declining an assignment if he or she:

- Does not understand the associated hazards or necessary safety precautions
- Has not received adequate instruction or authorization

These responsibilities are covered in General Employee Training. General rules of safety are also given in the Employee Handbook. It is a good practice to review these general rules with your employees from time to time, especially during safety meetings.

Safety Meetings

As a manager or supervisor, you are responsible for scheduling, conducting, and reporting required safety meetings. If your employees work in high-risk areas, they are required to attend a minimum of one safety meeting per month. Personnel whose work involves intermittent access to the plant or underground areas are required to attend at least six safety meetings per year. Personnel who work in low-risk areas are required to attend at least four safety meetings per year. You should ensure that your employees attend the required meetings. Document each meeting on WP Form 1408, "Safety Meeting Report." Instructions for conducting safety meetings are found in the "Safety Meeting" section of this module.

Ordering Personnel Protective Equipment

Managers and supervisors are responsible for authorizing employee requests for hard hats, safety glasses, safety shoes, or other personnel protective equipment. The equipment is provided by WID. Each department budgets for personal protective equipment.

Temperature Extremes

During hot weather, managers and supervisors are responsible for seeing that their employees take in enough fluids to prevent dehydration. The same is true if your employees are working close to hot equipment or some other source of extreme heat. Side effects of exposure to extreme heat include increased irritability, anxiety, and inability to concentrate.

Worker exposure to extreme cold should also be limited. For details, see the "Industrial Hygiene" section of WP 12-1.

Lighting

Managers and supervisors should ensure that adequate lighting is provided. This includes not only lighting for work areas, but for non-work areas as well. The industrial hygienist, on request, will perform lighting surveys.

Computer Work Stations

The repetitive motions required to operate at a computer work station can cause injuries over a period of time. On request, the industrial hygienist will survey computer work stations in your area and make recommendations intended to prevent repetitive motion injuries.

Fire Prevention Building Inspections

Managers and supervisors are responsible for inspecting their work areas routinely for fire hazards and for ensuring that activities do not present fire hazards.

Further detail on the responsibilities mentioned in this section can be found in WP 12-1.

E. LANDLORD RESPONSIBILITIES

Enabling Objectives

Upon completion of this section, the trainee will be able to perform the following:

1. Identify landlord responsibilities.
2. Identify good landlord practices.
3. Given a scenario, evaluate the manager's effectiveness concerning landlord responsibilities.

Every WIPP building is assigned a landlord. Unlike a landlord in the private sector, WIPP landlords do not collect rent, evict tenants, or perform maintenance. The landlord's primary responsibility is to ensure the building is kept clean, in good repair, and free of hazards. If maintenance is needed, the landlord is required to initiate a Plant Work Request or otherwise resolve the issue.

Each WIPP facility must be kept in a state of repair and cleanliness necessary to provide a safe workplace for employees and visitors.

The landlord has the responsibility to inspect the building at least quarterly for proper condition with regard to safety, fire prevention, appearance, and housekeeping per WP 15-063, "WIPP Building Landlord Program." In order for the program to work, building occupants must maintain most of the responsibility for safety and housekeeping in their own areas.

Using a checklist provided by Industrial Safety, the landlord makes a walking tour of the facility every three months to look for potential hazards. If repairs or maintenance are needed, the landlord initiates a Plant Work Request. Typical items on the checklist are shown in the Appendix.

The landlord is also responsible for:

- Accompanying inspectors from other organizations during inspections of the area
- Ensuring that audit shortcomings and inspection observations are corrected in a timely manner

- Directing the correction of discrepancies related to area housekeeping and personnel safety

- Ensuring that non-safety related issues are identified and resolved

  Such issues might include liveability and maintainability.

If you are not a landlord, it is important for you to help the landlord by assuming responsibility for housekeeping and personnel safety in your work areas.

Each landlord serves as a member of the inspection team coordinated by Facility Engineering per WP 10-010, "Facility Inspection." Other team members include representatives from Industrial Safety and Operations. The purpose of these inspections is to identify any significant maintenance or repair requirements necessary to keep the building in a state of good repair. The team looks at the following:

-Structural integrity
-Power distribution
-Lighting
-Plumbing
-Architectural features
-Safety conditions
-Physical appearance of equipment
-Fire prevention
-Fire protection impairments

If deficiencies are found, the landlord is responsible for taking action to correct the deficiencies. If a deficiency requires immediate action, the landlord must mitigate the hazard and initiate a Plant Work Request. If the deficiency does not require immediate action, the landlord is responsible for making long-term plans to correct the deficiency. Frequency of inspection varies according to the facility's age, condition, use, and importance to site operation.

Landlords are also responsible for seeing that eyewash stations and emergency showers are inspected weekly. These are placed in locations where there is a potential for exposure to harmful chemical or physical agents. For example, a combination eyewash station-emergency shower is located at the Hazardous Material Storage Area. For inspection requirements, see WP 12-1. If a task poses a potential exposure to chemical splash, ensure that your employees are instructed in the proper use of eyewash or shower equipment.

Good Practices for Landlords

- Ensure that the building has adequate heating during periods of extreme cold.
- See that temperature-sensitive equipment and water pipes are protected from freezing
- During your inspections, keep freeze protection in mind as well as damage that could be caused by extreme heat during the summer months
- Ensure that combustible material is not stored between buildings
- Become familiar with maintenance arrangements for ventilation equipment

  For buildings located on site, contact Work Control. For buildings in town, check the lease.
- When a deficiency is found, see that it is promptly corrected

  If necessary, track the status of a Plant Work Request to completion. Good practices for using Plant Work Requests are found in MAS-120, Maintenance and Work Control Systems and in MAS-121, Conduct of Operations.

CRITICAL INCIDENT
INEFFECTIVE BEHAVIOR

Occurrence: When a building changed hands among WIPP personnel, a new landlord was not appointed. The oversight did not show up until deficiencies were noted during the next building inspection.

Impact: During the previous inspection, a long list of deficiencies was written. These deficiencies went unattended because there was no landlord.

Lessons learned: Ensure that your building has a landlord.

F. FIRE PROTECTION

Enabling Objectives

Upon completion of this section, the trainee will be able to perform the following:

1. Identify features of the fire protection system.
2. Identify manager/supervisor responsibilities for fire protection.
3. Given a scenario, evaluate the manager's effectiveness concerning fire protection.

Because of the remote desert location of the WIPP, particular emphasis in facility design was given to fire protection. Water is pumped from off site into two large storage tanks west of the Waste Handling Building. The tanks are designed to hold sufficient water to mitigate any fire deemed credible by the Final Safety Analysis Report (FSAR).

Water pressure for fire fighting is provided by two pumps, one powered by an electric motor and the other powered by a diesel engine. This arrangement provides suitable backup in the event of a fire during a loss of power.

Major structures at the WIPP are provided with fire suppression equipment that will automatically actuate in the event of fire.

Other fire suppression equipment includes fire extinguishers and pumper vehicles located both on the surface and underground. Pumps are tested periodically to ensure operability.

The fire water system is inspected regularly by the fire protection engineer or an emergency services technician (EST). The fire water system for each building is also periodically tested to ensure operability.

Many of the fire protection criteria used at the WIPP are based on standards set by the National Fire Protection Association (NFPA). The NFPA standards include the National Electrical Code, which specifies rules for the wiring of buildings and other tasks. Fire protection plans also meet the requirements of DOE Order 5480.7A, "Fire Protection."

Many buildings are also equipped with sensors that set off alarms in the Central Monitoring Room (CMR) to alert operators of a possible fire. Some sensors detect temperature. Some detect smoke. Others detect fire water flow. Alarms in the CMR are also triggered by fire pull boxes.

Fire-suppression features are part of building design at the WIPP. Some walls are designed as fire barriers to prevent the spread of fire to other rooms. A door in such a wall is called a fire door. A ventilation damper in the wall, known as a fire damper, is especially designed to maintain the barrier under adverse conditions. If a Plant Work Request calls for the removal of a fire damper, modification to a fire wall, or keeping a fire door open, extra precautions may be added to the resulting work order to make up for the breach in protection.

Fire suppression features and fire protection features are documented in a pre-fire plan maintained by the fire protection engineer. Copies of the pre-fire plan are kept by the ESTs in case the information is needed to mitigate a fire.

Certain fire detection systems and fire suppression systems are required to be operable by the FSAR as a prerequisite for plant operation. These systems are located in the Exhaust Filter Building and the Waste Handling Building.

As a manager or supervisor, you are primarily responsible for ensuring that activities in your work area do not pose fire hazards. You are also responsible for seeing that access to fire suppression equipment is unobstructed and ensuring that your employees are aware of any fire protection impairment (such as a lockout). Fire suppression equipment in your area is formally inspected monthly by an EST or the fire protection engineer. The inspector notes the accessibility of pull boxes, hose reels, and other fire suppression equipment. Sprinkler obstructions are noted. Also considered is the quantity of combustible material stored in the building. A large quantity of stored combustible material can pose a potential spread-of-fire hazard. It is a good practice to have Industrial Safety personnel evaluate significant changes in quantity or location of stored combustible material.

Fire protection is a good topic to discuss at safety meetings. Your employees should know the location of fire suppression equipment in your work area and how the equipment works.

Additional information on fire protection measures at the WIPP is found in MAS-126, Emergency Preparedness.

G. SUBCONTRACTS AND SAFETY

Enabling Objectives

Upon completion of this section, the trainee will be able to perform the following:

1. Identify controls for ensuring subcontractor compliance with safety rules.

2. Given a scenario, evaluate the manager's effectiveness concerning subcontractors and safety rules.

The safety rules that apply to WID employees also apply to subcontract employees. Safety requirements are built into subcontracts.

Because OSHA requirements apply to all businesses, WID policies based on OSHA requirements usually are already familiar to subcontractors coming to the WIPP for the first time.

Proposed subcontracts are reviewed by Industrial Safety. If necessary, language calling for the work to meet specified safety standards can be added to a subcontract. The subcontractor may be required to see that employees undergo special training prior to performing the work or subcontract.

Subcontractor Injuries

If a subcontractor employee suffers a minor injury at the WIPP site, the employee should immediately go to the first aid station. Accident investigation and reporting, however, is the responsibility of the subcontractor. Industrial Safety maintains records of subcontractor injuries. These records are kept separate from WID injury statistics.

If a subcontractor employee suffers a minor injury at a WIPP facility in town, the employee should follow the subcontractor's safety program for obtaining first aid.

Unsafe Behavior or Unsafe Conditions

When supervising a subcontract task, it is usually a good practice to work with the subcontractor supervisor to resolve any non-compliance issue that might arise. You normally would not want to bypass the chain of command by giving instructions directly to subcontract employees. However, anyone who sees unsafe behavior or an unsafe condition at the WIPP is responsible for seeing that the behavior or condition is promptly corrected or controlled.

If you see a subcontractor employee behaving in an unsafe manner, it is your duty to challenge the behavior in the same manner in which you would challenge the behavior of a WID employee.

For example, you encounter a subcontract employee walking bare-headed in a designated hard-hat area. A simple, positive challenge is appropriate: "Do you know that you're in a hard-hat area?" Assume that the employee is unaware. Avoid saying anything negative, such as "Why are you in a hard hat area without your hard hat?"

If a crew's behavior is unsafe (i.e., no one wearing a hard hat) or an unsafe condition affects a crew, challenge the crew's supervisor. If the condition or behavior is not corrected, promptly notify Industrial Safety.

For more information on dealing with subcontractors, see MAS-116, Purchasing and Accounting.

CRITICAL INCIDENT
INEFFECTIVE BEHAVIOR

Occurrence: Early on in development of the WIPP, a group of workers was brought on site under subcontract to perform a task governed by federal regulations. After the workers arrived, it was learned that they did not have the safety qualifications necessary to perform the task. Special training was promptly arranged for the workers so that the task could proceed.

Impact: Valuable time was lost toward project completion. The task was behind schedule before work was even started.

Lessons learned: When drafting a subcontract, ensure any prerequisite safety qualifications are specified beforehand.

H. WHAT YOU CAN DO TO PREVENT ACCIDENTS

Enabling Objectives

Upon completion of this section, the trainee will be able to perform the following:

1. Identify methods for identifying potential hazards.
2. Identify methods for managing hazards.
3. Identify good practices for responding to unsafe behavior.
4. Identify practices to avoid in responding to unsafe behavior.
5. Given a scenario, evaluate the manager's effectiveness concerning accident prevention.

Communicate to your employee that you expect safety rules to be taken seriously; safety rules are meant to be followed. This means taking the time to find out what protective equipment is required for a job, wearing the proper protective equipment, following the procedure or job plan, and attending required training. Don't take exception to rules because you are a manager or a supervisor.

Establish the expectation that your employees will uphold safety rules as stringently as you do. If your work area requires eye protection and someone who is not wearing eye protection enters the area, that person should be challenged by you or one of your employees. If your work area requires safety glasses, you may wish to keep extra safety glasses on hand for use by visitors.

Four Methods of Managing Hazards

A hazard is defined as a source of danger. In your workplace, this means any existing or potential condition that can result in death, injury, property damage, or some other loss. Hazards can arise from human error as well as from conditions in the workplace. Ninety-five percent of all injuries are caused by unsafe acts. Part of your job as a manager/supervisor is the management of hazards. Here are four methods for hazard control:

- Eliminate the hazard

  Substitute a material, machine, or process. For example, a non-toxic solvent can be substituted for a toxic solvent. If a bookcase were in danger of falling, the hazard could be eliminated by getting rid of the bookcase.

- Isolate the hazard with an engineered means

  If the hazard cannot be eliminated, the next best method is to control or isolate the hazard. This is why live electrical busses are enclosed in cabinets or rooms, guard rails are installed around floor openings, and stairs are provided with handrails.

- Isolate the hazard with an administrative means

  Administrative methods include the posting of warning signs and barricades. Another example would be to limit work to short periods in noisy environments. Also included are policies, procedures, and training. Federal regulations require that engineering controls be exhausted before administrative controls may be used to eliminate a hazard.

- Protect against the hazard

  If engineering methods and administrative controls are inappropriate for controlling a hazard, personal protective gear should be used to protect against the hazard.

Hazards can result not only from the failure of a component or a device, but from one element acting on or influencing another. For example, an important computer database is supplied with backup battery power to protect against losing data in the event of a loss of off-site power. The installation of the battery backup is an engineering control for the loss of data hazard. The engineering control, however, does not protect against a human error such as failure to keep the batteries charged.

Identify Potential Hazards

To prevent accidents, potential hazards must be identified and eliminated or controlled. In the example above, an administrative control calls for the regular inspection of batteries used for backup power supply at the WIPP.

One way to prevent accidents is to recognize and deal with near accidents -- incidents that result in neither injury nor damage. Unless corrected, the hazard that causes a near accident usually has the potential to inflict injury or damage. Therefore, it is

important to find and eliminate the causes of a near accident to prevent a recurrence with more serious consequence.

For example, an employee reports sparks shooting from an electric hand-held drill. The employee feels no shock and is not otherwise injured, so this is a near accident. If the potential hazard -- the faulty drill -- is removed from service, a potential injury or fatality can be prevented.

Encourage your employees to report near accidents. In safety meetings, explain to them the importance of reporting near accidents so that potential hazards can be controlled or eliminated. Your job as a manager or supervisor will be much easier once your employees learn that they help themselves by reporting all near accidents.

How often should you inspect your employees' work areas for potential hazards? As often as you visit those work areas. Watching out for hazards should not be part of a special tour; rather, it should be an integral part of walking your spaces. Whenever you are out in your employees' work areas, be alert for hazards; anything that could cause an accident. Look for tripping hazards, shock hazards, poor housekeeping, improperly stored materials, missing equipment safeguards, deviations from procedure, and unsafe work practices. Some hazards are physical in nature, such as nails protruding through a wall. Others are behavioral, such as failure to wear protective gear or the bypassing of a safety procedure. When you learn of a potential hazard, correct it without delay. If one of your employees is endangered, stop work until the employee can safely proceed. Take the actions necessary to create a safe working environment. This might involve initiating a Plant Work Request or obtaining additional equipment. You are responsible for safe production. "Safe" and "production" are inseparable. As a manager/supervisor, you are not only responsible for providing a service or producing a product, you are also responsible for safely doing so.

Initiate Solutions

When a potential hazard is identified, ensure that the potential hazard is eliminated or controlled. Consider the following:

1. Can the hazard be eliminated?

   This often is the simplest solution. For example:

   -Nails protruding from a wall. Pulling the nails eliminates the hazard.

-A cracked electrical cord. Replacing the cord eliminates the symptom. Ensuring that your employees properly use the new cord eliminates the hazard.

-An uncovered electrical junction box. The cover can be replaced using a Plant Work Request.

2. If the hazard cannot be eliminated, can it be controlled through engineering?

   Hazards can often be isolated by the use of a guard rail, shield, anchoring device, or some other engineered means. You can ask for an engineering solution using a Plant Work Request.

3. Can the hazard be controlled through administrative means?

   Is existing policy adequate? Is a procedure needed? Would sign-off steps or hold points be effective? Is a warning sign necessary? Would training control the hazard?

4. Is the use of personal protective equipment appropriate for controlling the hazard?

   Clothing, breathing devices, headgear, footgear, gloves, and plastic suits are good examples of protective equipment.

If the potential hazard is brought to your attention by an employee, mitigate the hazard and ask the employee to recommend a solution. If assistance is needed, ask Industrial Safety personnel. If the hazard involves plant equipment, you may wish to ask the cognizant engineer for assistance.

Learn to Look for Unsafe Behavior

If a piece of equipment is running poorly, do you wait until the machine breaks down before you fix it? Or do you fix it as soon as you notice the poor performance? The machine should be repaired before it breaks down.

The same approach can be used to avoid industrial accidents. Look for unsafe behavior in the workplace. Usually, unsafe acts are those taken outside normal operating procedures. Consider the following example from another plant:

An employee stops chocking the wheels of trailers that are parked for loading. It is not immediately evident that the chocks are gone. First, a forklift driver notices that a trailer rolls backward as it is nudged by the forklift. Two weeks later, an employee standing on a trailer jumps

to the ground after the trailer rolls backward during loading. Three weeks later, a trailer is nudged by a forklift and rolls over an employee's foot. The apparent cause of the accident: failure of the first employee to chock the trailer wheels prior to loading; unsafe behavior.

Two near-misses preceded the accident. Had either of these been reported and looked into, the lack of chocks likely would have been discovered. But the supervisor either was not told of the near misses or did not identify them as such. After the accident occurred, the supervisor was required to investigate.

An earlier investigation could have prevented the accident. It is important to investigate near-misses. Finding and correcting the cause of a near miss can prevent future accidents. Be aware of the accident potential of incidents in the workplace.

Okay, so the supervisor tells his employees to chock trailers per procedure prior to loading from now on. The problem is solved, right? Probably not. The problem to be solved is neither the lack of chock placement nor the failure of the employee to follow procedure. The problem is the employee's failure to act safely. The ongoing nature of the behavior is due to more than oversight. One symptom might be a poor attitude toward work. Another symptom could be the misplacement of the chocks ("they were lost"). However, these are not causes. The root cause -- the cause that if eliminated would prevent recurrence -- could be a lack of either leadership or motivation by the supervisor. Other possible causes: a lack of training in safe work practices or a lack of understanding of the importance of procedural compliance. A poor attitude toward work might improve following counseling or discipline. For assistance in determining an appropriate course of action, contact Employee Relations.

Accentuate the Positive When Responding to Unsafe Behavior

How you respond to unsafe behavior is crucial to modifying the behavior. Consider a supervisor, for example, who watches as an employee begins to lift a box of books by bending over at the waist. There are at least three methods the supervisor could use to handle this unsafe behavior:

- Say nothing at all and hope the employee does not injure his back

  Apathy amounts to more than ignoring supervisory duties. Apathy amounts to negligence. This approach is ineffective in accident reduction; the supervisor is accountable for employee behavior.

- Publicly chastise the employee and issue warnings: "You better not let someone from safety catch you lifting a heavy object like that. Use your legs to lift. I don't want to have to report you as an accident statistic."

  This approach, which is not recommended, is negative; the employee is directed to listen as the supervisor delivers a threat. This, too, is ineffective -- the employee has no demonstrable participation in the exchange; the supervisor has no indication that the employee now knows how to lift safely.

- Stop the employee in mid-action, before the load is lifted: "Hey, hold on there. Let me show you a better way to lift that. Squat down like this, pull the load in toward your torso, then use your legs to lift straight up without twisting. Now you try it. Doesn't that feel better?"

  This is the recommended method. The approach is positive. You have something good to share. Instead of being criticized, the employee is offered helpful advice and a demonstration of the safe way to lift a heavy load. Immediately afterward, the supervisor can observe whether the employee has learned the prescribed behavior.

The positive approach will motivate your employees. Whenever you observe safe behavior, recognize the behavior with a favorable comment. A task performed safely is just as deserving of praise as a task performed well. For example, "That's the way to protect your back, John." This practice lets your employees know that you are interested in their safety.

How you are perceived by your employees is important to accident avoidance. Your employees will be motivated by your good leadership. Set a personal example. Show enthusiasm. Develop an eye for unsafe behavior. Do not tolerate it. Encourage your employees to report unusual incidents.

When you see someone behaving in an unsafe manner, act in a positive manner to correct the behavior.

You shape the attitudes of your employees. Establish the expectation that nothing short of as safe a workplace as possible will be tolerated.

Accident Causes

Many accidents can be attributed to the employee deviating from the accepted routine, either by taking action that should not have been taken or failing to take action that should have been taken. The issue to be resolved is not whether there was a deviation, but why there was a deviation. If you set out to find out who did not follow the set routine, your finding will only fix blame. If you set out to find out why the routine was not followed, your finding can result in a solution. Consider another example:

> While trying to unscrew a burned-out light bulb, an employee breaks the bulb bare-handed. The employee had learned in on-the-job training to wear leather gloves to protect his hands while unscrewing bulbs. He had removed a glove to get a better grip when the bulb offered resistance.

To dismiss this near accident as being caused by a deviation from standard procedure will not prevent a recurrence. To prevent recurrence, the standard method for changing light bulbs needs to be changed to include instructions for safe removal of a stuck bulb. The employee will need to be instructed and demonstrate adequate understanding of the desired method.

Because the employee's instructions did not cover what to do with a stuck bulb, there was no standard to follow for safely continuing with the task. This is a management shortcoming that if fully addressed could prevent recurrence.

Listed below are some examples of reasons behind unsafe acts or omissions. Possible corrective actions follow each.

- There was no known standard for safely performing the task

  Write a procedure based on a Job Hazard Analysis as described in the "How to Analyze Tasks for Hazards" section of this module.

- The employee was unaware of the standard method for safely performing the task

  Instruct the employee. Have the employee demonstrate proficiency to your satisfaction, either in a mockup or by actually performing the task.

- The employee knew but did not follow the standard method

  Is the employee motivated? Does a procedure exist for the task that can be followed and checked off step by step? Consider a performance discussion with the employee. If the task is not procedural, consider preparing a checklist for the employee to follow.

- The standard method is itself unsafe, even when correctly followed

  Perform a Job Hazard Analysis as described in the "How to Analyze Tasks for Hazards" section. Use the results to revise the standard method. If equipment repair or modification is necessary, initiate a Plant Work Request.

- The employee bypassed safety equipment

  Change the standard method so that safety equipment cannot be bypassed. This can be done by adding specific instructions or check-offs to procedure steps or adding procedure hold requirements. Walk through the method with the employee.

- The employee omitted actions because of deadline pressure

  Change the job requirements. Establish effective communication with the employee so that concerns about an approaching deadline are known in time for you to act.

I. INCIDENT REPORTING REQUIREMENTS

Enabling Objectives

Upon completion of this section, the trainee will be able to perform the following:

1. Identify good practices for reporting incidents.
2. Identify practices to avoid in reporting incidents.
3. Identify good practices for investigating incidents.
4. Identify practices to avoid in investigating incidents.
5. Given a scenario, evaluate the manager's effectiveness concerning incident reporting requirements.

One of your employees trips and sprains an ankle. The employee limps to your desk and asks you what to do.

Your first responsibility is to see that medical treatment is provided. Notify the CMR at the non-emergency number, 8457. Calling the CMR is the quickest way to obtain first aid. On site, the employee might be asked to go to the First Aid Station located on the first floor of the Safety Building. In town, you may be asked to accompany the employee to the office of the company physician.

After the employee is treated, the site nurse or an EST initiates an Injury Report (WP Form 1462). Copies of the report are issued to Industrial Safety and to the employee's supervisor. As the cognizant manager or supervisor, you are responsible for completing the investigation portion of the report. The completed report is sent to Industrial Safety and the site nurse for record keeping purposes.

Have the employee complete a Notice of Accident (Workers' Compensation Administration Form NOA-1). Copies of the form are available in the Support Building foyer and at other locations on site. The form must be completed by the employee and signed by you within 15 days of the incident.

For further information regarding incident reporting, see WP 12-130, "Reporting Occupational Injuries, Illnesses, and Fatalities."

An occupational injury is one that results from a work accident or a single instantaneous exposure in the workplace. This includes injuries resulting from one-time exposure to chemicals and bites from insects or animals.

Occupational injuries that require first aid only are recorded internally. First aid incidents involve an injury such as a scratch, cut, burn, or splinter that requires a one-time treatment and subsequent observation.

The following types of accidents are recorded by OSHA:

- Occupational fatalities
- Occupational injuries that require medical treatment beyond first aid
- Occupational illnesses

Medical treatment involves medical care or surgical care for injuries that are not minor. An injury is not minor if it:

- Must be treated only by a physician or licensed medical personnel
- Impairs bodily function (such as normal use of senses or limbs)
- Causes a fracture
- Involves complications requiring follow-up medical treatment

As a manager or supervisor, you are required to secure the scene in the event of an occupational fatality. You are also required to secure the scene in the event of an occupational illness or injury that involves any of the following:

- Loss of consciousness
- Restriction of work or motion
- Transfer to another job
- Medical treatment other than first aid

After the scene is secured and aid is rendered, notify the CMR.

An occupational illness is any abnormal condition or disorder caused by exposure to environmental factors associated with employment. This does not include conditions or disorders resulting from an occupational injury, but does include illnesses caused by inhalation, absorption, injection, or direct contact.

The following categories are used to classify occupational

illnesses:

- Occupational skin diseases or disorders
- Dust diseases of the lungs
- Respiratory conditions due to toxic agents
- Poisoning (systemic effects of toxic materials)
- Disorders due to physical agents other than toxic materials. Examples include heat stroke, heat exhaustion, and frostbite.
- Disorders associated with repeated trauma. Examples include noise-induced hearing loss and conditions due to repeated motion.
- All other occupational illnesses

For reporting purposes, recordable cases are further categorized by Industrial Safety into lost-work-day cases. A lost-work-day case involves days away from work or days of restricted work activity or both.

Visitor Accidents

Visitors are not covered under OSHA or workers' compensation insurance. However, a visitor who suffers an injury should receive the same attention as an injured employee. If the injury is minor and occurs on site, have the visitor and his or her escort go to the first aid station. If the injury is minor and occurs in town, accompany the visitor to the company physician's office (or to another physician's office, if the visitor prefers). Notify the site nurse or EST.

Good Practices for Reporting Incidents

- Notify the first aid station for scratches or small cuts that occur on the job so that a proper record can be made of the accident

  Small cuts and scratches generally are not reportable under OSHA or MSHA. However, if the cut or scratch were to become infected or otherwise worsen, the event would be reportable.

- If an on-site injury or illness is serious, **immediately** call the CMR at 8111

- If you are in town, call the Carlsbad Emergency Center at 9-911 and the CMR at 8457

  For an in-town injury such as a broken limb, you should notify the CMR at 8457 and accompany the employee to the hospital emergency room. Manager and supervisor responsibilities for responding to emergencies are detailed in MAS-126, Emergency Preparedness.

- Encourage your employees to report occupational injuries or illnesses, no matter how slight

  An accident involving a small cut, scratch, or splinter can represent the potential for greater injury or property damage.

- If a visitor is injured, give the visitor the same attention that you would give to an injured employee

- Follow up on injuries and illnesses

Practices to Avoid in Reporting Incidents

- Delaying a call for emergency help because you're not sure whether there is an emergency

  If you call for emergency help and later find out that there really is not an emergency, no harm is done. If you don't call and find out later that you should have called, the accident victim stands to lose. If you think that you might have a medical emergency on your hands, immediately make the call.

- Telling employees not to report minor cuts received on the job

  If the injury becomes serious, the failure to report may result in denial of any related workers' compensation claim.

- Allowing employees to evade first aid treatment or examination because they do not wish to be examined

  First aid can prevent or mitigate complications. An injury may not start to hurt until later. If an employee is involved in an incident that might have caused injury, ensure that the employee is promptly examined.

Incident Investigation

You are responsible for preserving the scene of any incident in your area.

Your investigation should answer the questions posed on page 2 of WP Form 1462, which requires good basic information gathering. First, describe the general type of task the employee was performing when the incident occurred (for example, making operator rounds), then describe the specific activity the employee was performing (for example, checking oil level in gear case). If the employee was using tools or equipment, describe how the tools or equipment were being used. If the employee was handling material, describe how the material was being handled.

Next break down the sequence of events leading to the incident. In most accidents, the accident event and the injury event are separate. For example, suppose a chip of steel strikes an employee's face while the employee is using a grinder. The accident event is the chip of steel flying off. The injury event is the chip cutting the employee's face.

Describe in detail the kind of injury resulting from the accident and the part, or parts, of the body affected. If reporting on an occupational illness, give the diagnosis and the body part, or parts, affected.

There also may be related events preceding the accident event that contributed to the accident. This could be action that should have been taken and wasn't or action that shouldn't have been taken and was. The grinder in the example above may have been fitted with a grinding wheel that was not designed for use on steel. To decide whether a preceding event should be included, determine whether the action or lack of action led to the injury. By identifying contributing causes, you and your employees can help prevent other types of accidents in addition to the accident that occurred.

Specify the corrective action taken as a result of the incident. Prerequisites to grinding steel, for example, could be formally changed to require the person operating the grinder to wear face protection.

After you sign the report, forward it to Industrial Safety as soon as possible. The incident must be reported within five days.

Good Practices for Investigating an Incident

- Gather information as soon after the incident as you can

  It is best to talk with witnesses while details are fresh in mind.

- Interview each witness separately, out of earshot of others
- Interview at the incident scene if you can

  If you can't, interview in a neutral location such as a meeting room.

- Be a good listener
- Ask open-ended questions
- Try to be unobtrusive in taking notes
- Ask the witness for recommendations
- Repeat the facts back to the witness before ending the interview
- End on a positive note

Investigation Practices to Avoid

- Leaving the investigation up to someone else
- Discussing blame or conjecture

  Interviews should be concerned only with the facts, not blame.

- Asking leading questions
- Questioning more than one person at a time

Incidents that are reportable to the DOE are formally investigated by Operations Self-Assessment. If an incident is not DOE-reportable, a formal investigation may still be warranted if the circumstances are complex. For information on the formal investigation of non-reportable events, see MAS-121, Conduct of Operations.

CRITICAL INCIDENTS
EFFECTIVE BEHAVIOR

Occurrence: An employee inadvertently caught his arm in an airlock door. He said he did not want to report the resulting injuries because he was goofing around when the accident happened. The employee's supervisor, after overhearing other employees discussing the event, immediately took the injured employee to the first aid station. The employee was subsequently sent to a hospital emergency room for treatment of minor lacerations.

Impact: The employee was given first aid. No further treatment was needed. Had the injury not been reported and treated, complications -- such as infection -- could have developed. The employee could have been denied workers' compensation.

Lesson learned: If one of your employees does not want to report an accident, insist that he or she report the accident and be examined for injury.

Occurrence: An employee walked into his supervisor's office underground and said, "I feel bad." The supervisor noticed that the employee's face was ashen, he was sweating, and his breath was short. The supervisor immediately called the first aid station and told the site nurse that he thought the employee was having a heart attack. The employee was promptly evacuated using the waste handling shaft and sent by ambulance to a hospital, where he was treated for a potential heart problem.

Impact: This employee could have died had he not received prompt care.

Lessons learned: If you are unsure whether a life-or-death situation exists, call for help immediately. It is far better to assume there is an emergency and be wrong and than to risk a life by assuming there is no emergency. The caller in this example should have called the CMR at 8111 first -- had no one been at the first aid station, the response would have been delayed.

J. HOW TO ANALYZE TASKS FOR HAZARDS

Enabling Objectives

Upon completion of this section, the trainee will be able to perform the following:

1. Identify good practices for hazard analysis.
2. Identify practices to avoid in hazard analysis.
3. Given a scenario, evaluate the manager's effectiveness concerning the analysis of tasks for hazards.

Formal safety analysis is one of your best techniques for identifying hazards and preventing accidents. There are two documents used for conducting formal safety analyses at the WIPP, the Job Hazard Analysis (JHA) and the Safe Work Permit (SWP). The JHA provides a more thorough analysis.

Job Hazard Analysis

The idea of the JHA is to break down a hazardous task into single-action steps. Each step is checked for associated hazards or potential accidents. Once identified, hazards can be eliminated or guarded against using the methods explained in the "What You Can Do to Prevent Accidents" section of this module.

Instructions for conducting a JHA are found in WP 12-111, "Job Hazard Analysis." One of the uses of JHAs at the WIPP is to analyze hazards in new procedures or Plant Work Requests. In these instances, the JHA is reviewed for approval by Industrial Safety personnel.

However, it is a good practice to complete a JHA for other tasks as well, including routine jobs in your work area. This type of JHA does not require Industrial Safety approval. Take a routine task such as filing, for example. If a file drawer is left open, the open drawer poses a trip hazard. If too many drawers are opened at once, the file cabinet can tip over on the employee. If the top drawer is filled and the other drawers are empty, opening the top drawer can tip over the cabinet.

Another good example is the use of personal computers. If one of

your employees uses a personal computer for hours at a stretch, use of the computer could pose the risk of wrist injury or back pain. These hazards can be prevented by adjusting the keyboard, the chair, and the video terminal to a working position appropriate for the employee.

It is important to conduct a JHA on only one task at a time. Top priority should be given to those tasks in which accidents have occurred or almost occurred. This includes not only accidents that involved injury, but also accidents that resulted in property damage. Second priority should go to tasks that pose the potential for a severe accident, although an accident or near accident has not yet occurred. Third priority should be given to newly established tasks. A new task can contain potential hazards not previously encountered.

You and the employee who performs the task can break the task into steps using WP Form 1385, "Job Hazard Analysis," which is attached to WP 12-111. What needs to be done first? With a personal computer, the first step is to turn on the machine. With a maintenance task, the first step might be to obtain the proper tools.

What actions are required to perform the task? List the actions in order, with no more than one action per step. Avoid providing either too much detail or too little. Detail should be sufficient to cover the step. Too much detail will create an unnecessarily long list of steps. Too little will leave out some basic steps. If the task is performed by procedure, use the procedure steps.

When the steps are listed, return to the top of the list. For each step, consider the following:

-Do hazards exist for this step?
-Could an accident occur at this step?

Any hazards you and your employee come up with should be listed in the "Potential Accidents/Hazards" column of the form. Number your entries to correspond with step numbers. If there is no hazard for a step, write "none."

After the hazards are listed, consider how each hazard can be eliminated or controlled. If personal protective equipment such as a hard hat is necessary, list the equipment in the "Recommended Safe Job Procedure" column. If action by the task performer is required, specify the action. Avoid vague references to being careful or cautious. For instance, stating that "extra care is required" is of little or no use in protecting your employees. If the hazard is a file cabinet that will tip over, the recommendation "use extra care when loading the top file drawer" is not specific enough to be of use. The following

statement is more specific: "If all drawers are empty, do not load top drawer first." Another example: "Close each file drawer before opening another." Number each Recommended Safe Job Procedure to correspond with the associated step.

When an informal JHA is completed, review the steps for completeness with the employee who performs the task. Have the JHA typed and made available for daily use in or near the area where the task is performed. Ask for your employees' help in keeping the JHA current. Each JHA should be reviewed periodically to keep up with changes in the task.

Spelling out the hazards specific to a task provides other benefits. The JHA is invaluable to employees who are new to a task. This could be a new employee or a transferred employee. The needed personal protective equipment is listed at the top of the form. The form also details each hazard and what can be done to prevent or eliminate the hazard. The JHA can also be used for refresher training. If the task is performed infrequently, your employees should review the JHA as a prerequisite to performing the task each time the task is performed.

If an accident occurs during a task for which a JHA is prepared, the form will help you complete the accident investigation. You may find a hazard that was missed in the earlier analysis or a recommended action that was not followed.

Safe Work Permits

For hazardous jobs for which a JHA is inappropriate, a Safe Work Permit (WP Form 1114) is used instead. The permit is required for any hazardous job not covered by an approved JHA.

This includes one-time plant modification or construction tasks, tasks that are beyond the scope of existing procedures, and tasks for which existing hazard controls cannot be used.

The job supervisor is responsible for determining whether an SWP is needed and for initiating the permit. Normally, tasks that require a Safe Work Permit are performed by Engineering, Maintenance, or Operations. Requirements for obtaining and using a Safe Work Permit are detailed in WP 12-121, "Safe Work Permits." Examples of activities requiring a Safe Work Permit are listed in an attachment to the procedure. The permit, which must be reviewed and approved by Industrial Safety personnel, provides formal control over hazardous working conditions. This can include work with any of the following:

- Corrosive substances

- Confined spaces
- Hazardous chemicals
- Hazardous atmospheres, e.g. those found inside empty chemical storage tanks
- Energized electrical equipment carrying more than 48 volts of electricity
- Excessive noise
- Dust generation
- Extreme temperatures
- Ambient inert gas
- Scaffolding higher than six feet
- Bypassed or inoperable safety devices
- Rigging
- Welding/cutting performed outside designated shop areas
- Overhead work that poses a hazard to personnel below

Good Practices for Job Hazard Analysis

- Complete JHAs for routine jobs in your work area

  Get your employees involved. Delegate JHA preparation.
- Limit the scope of each JHA to only one task at a time
- In selecting tasks for analysis, give priority to accident-prone tasks
- In writing the JHA, provide sufficient detail to cover each step
- Avoid vague references to being careful or cautious

  Specify what action the task performer needs to take to proceed in a safe manner.
- Have informal JHAs typed and kept available to the employees who perform the associated tasks

- For infrequent tasks, make review of the JHA by your employees a prerequisite to performing the task
- Review each JHA periodically to ensure that it is up to date
- Use JHAs for on-the-job training and refresher training

Practices to Avoid

- Assuming there are no hazards in your work area
- Limiting the use of JHAs to tasks for which JHAs are required
- Using vague language to mask inadequacies in JHA preparation
- Depending on Industrial Safety to identify hazards in your work area

CRITICAL INCIDENT
INEFFECTIVE PERFORMANCE

Occurrence: An office trailer was installed and furnished without informing Industrial Safety. Because the aisles were not clear of furnishings, the furniture had to be rearranged. When the aisles were clear, a safety evaluation was performed.

Impact: Occupancy of the office trailer was delayed.

Lesson learned: Inform Industrial Safety of new buildings or additions to existing buildings ahead of time.

K. ELECTRICAL SAFETY

Enabling Objectives

Upon completion of this section, the trainee will be able to perform the following:

1. Identify good electrical safety practices.
2. Identify electrical practices to avoid.
3. Given a scenario, evaluate the manager's effectiveness concerning electrical safety.

Electricity is a powerful ally. It runs our computers, hoists, communications equipment, and lighting systems. But as a hazard, electricity can electrocute, burn, or shock your employees.

Electrical accidents result from:

- **Unsafe conditions** such as defective parts or loose connections
- **Unsafe acts** such as working too close to exposed energized power lines

Electrical safety is covered in General Employee Training. Employees who work with electrical equipment receive job-specific training in electrical safety.

Landlord Safety Checks

Landlords, who are responsible for performing periodic safety inspections of WIPP structures, should be aware of applicable electrical safety standards. Landlords of temporary buildings should be especially wary of electrical hazards because these structures do not undergo the design rigor used for permanent buildings. Here are some examples of standards used by OSHA and the National Electrical Code (this list is not comprehensive):

- All unused openings in junction boxes and electrical equipment must be effectively closed to prevent objects from entering the enclosure and shorting the conductors

- All fixed electrical equipment must be firmly secured to the surface on which it is installed

  Electrical equipment boxes must be secured to the wall.

- Sufficient access and working space must be maintained around all electrical equipment

  Space around electrical equipment cannot be used for storage.

If you are a landlord, your own past inspection reports are your best sources of information on applicable standards.

Coffee Makers

A coffee maker that is left unattended for too long can become a fire hazard. For this reason, the use of coffee makers is controlled. Use of a coffee maker in your work area must be approved by your section manager and the fire protection engineer. Only certain types of automatic electric coffee makers are authorized.

Refreshment Areas

Landlords are responsible for periodically inspecting refreshment areas to ensure that fire safety standards are met. Landlords are also responsible for inspecting individual coffee makers and refrigerators. The coffee maker should be located on a non-combustible surface away from explosives, radioactive materials, and hazardous chemicals. The electrical receptacle used by a refrigerator should not be used by any other device. Landlords are also responsible for seeing that appliances are cleaned regularly.

Excavation Requirements

Extra precautions are used to avoid buried electrical cables. Instructions are prepared that include a current drawing of buried cables in the area to be excavated. A Safe Work Permit must also be approved for the task.

Prior to the excavation, the buried cables are identified using the drawing and a radio detection device. The device may also be used to search the area for any energized cables not identified on the drawing. Excavation is stopped one foot from each known energized cable. Digging within the one-foot zone is continued, if needed, by hand. Another employee and the task supervisor must be within sight or hearing of the excavator at all times. Full

excavation requirements are provided in WP 12-1.

Good Practices

- If your employees are qualified to perform electrical work, ensure that they receive adequate initial and refresher training

- Encourage your employees to immediately report to you any damaged or worn electrical equipment

- Make sure your employees know the facts about shock hazards

  A common misconception about electricity is that only high voltage can kill; a frayed lamp cord will only give a tingling shock. Current is the flow of electricity through the line. It is similar to water flowing through a pipe. Low current from a wall socket is dangerous. The current required to operate a common 120-volt, 6-watt night light can kill. If passed through the human body, this small amount of current can cause the heart to start beating rapidly and irregularly. The irregular beat can kill the victim unless resuscitation techniques are immediately applied. Some circuits with less than 110 volts can still be dangerous. Voltage is similar to water pressure. The higher the voltage, the greater the pressure that drives the electrical current. At lower voltages, current can still be sufficient to kill. At higher voltages, it is possible for victims to be severely burned and still live.

- If you learn of a minor electrical deficiency, initiate a Plant Work Request to have the deficiency repaired

  If wires are bared or some other hazard is posed, request immediate repair. If repairs must be delayed, ensure the area is barricaded per WP 12-1, WIPP Safety Manual.

- While walking your spaces, be on the lookout for defective electrical parts or loose connections

- Use common sense when working around or near energized lines or equipment; avoid contact

- Follow material safety data sheet precautions when working around flammable liquids

  Sparks from electrical devices can ignite flammable materials.

- If long conductive objects such as rods or pipes are

transported in your area or used in your area, ensure contact with lights or lines is prevented by shielding or guarding

- If your section or department obtains a new item of electrical equipment, ensure your employees are trained in safe operation of the equipment before attempting to use it

Practices to Avoid

- Postponing the training of employees on the use of new equipment
- Using or tampering with defective electrical gear

  This includes common items, such as surge protectors and power cords for lamps.
- Attempting electrical repairs on your own unless you are qualified to do so

  Only personnel especially qualified may perform electrical repairs at the WIPP.
- Resetting a tripped circuit breaker

  Breakers at the WIPP are to be operated only by qualified personnel. The cause of the breaker trip must be known and corrected before the breaker can be reset.

L. HAZARDOUS MATERIALS

Enabling Objectives

Upon completion of this section, the trainee will be able to perform the following:

1. Identify manager/supervisor responsibilities for hazardous materials.
2. Identify good practices for using hazardous materials.
3. Identify hazardous materials practices to avoid.
4. Given a scenario, evaluate the manager's effectiveness concerning hazardous materials.

The OSHA hazard communication standard provides employees with the right to know what chemical hazards are faced on the job and how to protect against them. The standard, which is covered in General Employee Training, requires chemical manufacturers to determine the physical and health hazards of each chemical. These hazards are communicated through the use of container labels and material safety data sheets. The procedure used at the WIPP to comply with the hazard communication standard is WP 12-107, "Hazard Communication Program."

As a manager or supervisor, you are responsible for seeing that chemicals are safely used in your work area. This includes everyday chemicals, such as toner for copying machines, as well as corrosives and other strong chemicals.

Hazardous substances stored at the WIPP include chlorine, battery acid, diesel fuel, gasoline, and oil. Good practices for the receipt and storage of hazardous materials are found in MAS-117, Material Control.

If hazardous materials are used or stored in your area, you are responsible for seeing that your area has a hazardous materials area representative. Duties involve maintaining material safety data sheets and helping keep track of your area's hazardous materials.

Managers and supervisors are responsible for developing on-the-job training to cover the following:

- Operations in your work area in which hazardous materials are used or during which hazardous materials are present
- Health hazards, if any, associated with hazardous materials in the area
- Methods for detecting an unacceptable release of hazardous material -- sight, smell, detection device, etc.
- Methods of personnel protection
- Where to obtain information on the materials
- How to determine hazards from label data
- Emergency procedures for hazardous materials

The Technical Training Section will help you set up on-the-job training.

Managers and supervisors also are responsible for seeing that every employee assigned to a hazardous materials work area knows and understands his or her responsibilities concerning the materials. Assistance is available from Industrial Safety.

Other manager/supervisor responsibilities:

- Obtain material safety data sheets on any new commercial product that you anticipate will be used in your work area
- Ensure that an appropriate procedure or Safe Work Permit is available to employees working with the hazardous material
- Ensure that your employees are scheduled for required training
- Use WP 12-121, "Safe Work Permits," for any non-routine handling of hazardous materials
- If a substance could pose an airborne hazard, contact Industrial Safety for evaluation and safety planning

<u>Good Practices</u>

- Ensure that hazardous chemicals are handled only by employees who have completed specific training in the safe handling, use, and disposal of the chemical

  On-the-job training for the use of specific hazardous materials, including those to be used in a non-routine task,

is the responsibility of the task supervisor. This training will include a review of the material safety data sheet, use of personal protective equipment, and steps to take in case of an emergency. Completion of the training must be recorded in each employee's training record. Assistance with the training is available from Industrial Safety and Technical Training.

- If a hazardous chemical is transferred from the original container into another container, ensure that the person making the transfer labels the new container

  Labels for this purpose are available from Industrial Safety.

- If hazardous chemicals are stored or used in your area, maintain an accurate and up-to-date chemical inventory list

  Ensure that a material safety data sheet is available in your area for each chemical on the list. Industrial Safety maintains a master file of material safety data sheets for every material used on site.

- Plan in advance for the disposal of used or excess hazardous material

- If your employees handle or are exposed to a hazardous material, make a formal plan to minimize their exposure

  Exposure to a hazardous chemical should be pre-planned with the same cautious deliberation used to pre-plan exposure to radiation.

- Keep exposures as low as reasonably achievable (ALARA)

  Use the ALARA concept of time, distance, and shielding:

  - Minimize the duration of exposure

    If a chemical is needed for only part of a task, put the chemical away when that part is finished.

  - If possible, distance your employees from the hazard

    If the chemical can be applied by one employee, do not expose other employees. If a chemical releases hazardous fumes after application, consider stopping work until the fumes are not as hazardous.

  - Find out what personal protective equipment is recommended on the material safety data sheet

Provide accurate hazard information on the Safe Work Permit so that Industrial Safety personnel can specify adequate precautions.

- If a task will involve an unusually hazardous chemical exposure, have the work plan or procedure reviewed in advance by the ALARA and Chemical Exposure Committee

  Further information on this committee and its functions can be found in the "Monitoring the Safety Program" section of this module.

Practices to Avoid

- Allowing a hazardous material to be handled by employees who are not trained in the proper handling of the material
- Allowing employees to handle chemicals that are neither labeled nor otherwise known

CRITICAL INCIDENT
INEFFECTIVE BEHAVIOR

Occurrence: During an inspection of a storage building, two cans of ether were found. Prior to the inspection, no one knew that the ether was there.

Impact: The ether's expiration date had passed. The material was potentially explosive.

Lesson learned: Maintain an accurate and up-to-date list of chemicals stored in your work area.

M. HOUSEKEEPING

Enabling Objectives

Upon completion of this section, the trainee will be able to perform the following:

1. Identify good housekeeping practices.
2. Identify housekeeping practices to avoid.
3. Given a scenario, evaluate the manager's effectiveness concerning housekeeping.

Sloppy housekeeping is a preventable hazard. Good housekeeping at the WIPP means keeping objects where they belong and keeping things clean. It also means using equipment and chemicals as they are intended to be used.

Let your employees know that the appearance of their workplace indicates their level of pride in their work. Remind them that each individual's own good housekeeping practices will help keep his or her work area safe.

Good housekeeping is especially important in dense office areas, where multiple computers are connected and lots of paperwork flows. It is important to keep paper stored or filed and watch out for bared electrical components in these areas. Desk drawers left open pose a trip hazard, as do file drawers.

Good Practices

Listed below are some rules for good housekeeping that you should share with your employees and enforce. Ensure:

- Work areas are kept as clean and clear as possible

  A cluttered work surface can mask a potential electrical hazard or accumulation of a flammable substance.

- Work areas, aisles and passageways are kept clear

  A small object such as a chip of wood, a box, or an electrical cord appears harmless until it causes a passerby to trip.

- Floors are regularly swept, mopped, or vacuumed

  Any substance or material not intended to be on the floor is a potential hazard that may cause falls, fires, or other harm.

- Smoking is restricted to designated areas

  Disposing of cigarette ashes in trash cans can cause a fire.

- Access is open to exits, fire extinguishers, breaker boxes, and alarm pull handles

- Equipment and materials are properly stowed when not in use

- Waste materials are stowed in appropriate containers and disposed of in a safe manner

  An oily rag, for example, becomes a fire hazard if thrown into the trash. Separate approved metal containers with lids are provided for oily rags and other combustibles. Approved containers are provided for rubbish throughout the site.

- Dust and oil mops are hung up or stored to allow adequate ventilation

- Waste materials are emptied from waste containers into dumpsters

- Supplies and materials in the work area are kept to a minimum

- Ceiling tiles are maintained in their installed position

- Space between buildings is kept clear of combustible material

Practices to Avoid

- Assuming that janitorial employees handle housekeeping for you

  Ensuring that a floor is free of hazards is different from ensuring that the same floor is clean.

- Storing boxes and heavy objects on top of cabinets that were not designed for such storage
- Placing combustible material behind or on top of cabinets
- Storing items near electrical equipment

  Stored materials around electrical panels can delay access to equipment disconnects in an emergency. Slippery floors can pose the same potential for delay.

N. WORK IN HIGH PLACES OR CONFINED SPACES

Enabling Objectives

Upon completion of this section, the trainee will be able to perform the following:

1. Identify controls for work in confined spaces.
2. Identify controls for work in high places.
3. Given a scenario, evaluate the manager's effectiveness concerning work in high places and confined spaces.

Extra safety precautions are also required for work in confined spaces such as storage tanks, manholes, pits, sumps, ventilation ducts, and filter enclosures. These areas are hazardous because of their limited openings for entry/exit and unfavorable natural ventilation. Potential hazards include insufficient oxygen, toxic fumes, flammable atmospheres, and cave-ins.

Scaffolds and ladders pose hazards to those who work from them as well as to people below. Special rules apply.

Confined Spaces

Precautions for working in confined spaces are given in WP 12-110, "Confined Space Entry Procedure." If your employees will be working in a confined space, you are responsible for identifying the work area as a confined space. A Safe Work Permit is required. The permit identifies protective measures to be taken.

Prior to working in a confined space, employees are required to complete training on confined space entry. Two or more employees work together as a team to complete the work safely. Each worker must know what the other worker is doing at all times. Entry into a confined space may require the use of a breathing apparatus, a safety harness, or other special protective gear.

Areas at the WIPP that have been designated as confined spaces are posted with signs identifying them as such. A list of confined spaces is attached to WP 12-110.

Scaffolding and Ladders

Employees who work on scaffolds, ladders, and elevated platforms face the danger of falling. People who walk or work underneath risk being hit by falling materials.

Safety requirements for the use of scaffolds are explicit regarding:

-railing
-fall protection
-scaffold stabilization
-ladder access to scaffolds
-erecting scaffolds
-structural integrity

Requirements for the use of ladders address issues such as stability of footing, reach area from the ladder, and safe work methods.

Requirements are listed in WP 12-1. Both OSHA and the American National Standards Institute set standards for the use of scaffolds and ladders. These standards are used at the WIPP.

O. SAFETY MEETINGS

Enabling Objectives

Upon completion of this section, the trainee will be able to perform the following:

1. Identify ways that safety meetings can help maintain a safe workplace.
2. Identify good practices for preparing and conducting safety meetings.
3. Identify practices to avoid concerning safety meetings.
4. Given a scenario, evaluate the manager's effectiveness concerning safety meetings.

The safety meeting is one of the best means for motivating your employees to work safely. The open, informal atmosphere of a small-group meeting encourages a question-and-answer format that personalizes safety issues.

Here are some of the ways that safety meetings can help you perform your responsibilities for maintaining a safe workplace. Safety meetings:

- Encourage safety awareness

  Regular safety meetings stimulate awareness. Other means of getting the safety message across are often easily ignored. When a small group of workers gathers to discuss hazards encountered and steps for eliminating those hazards, each worker's safety consciousness is increased.

- Actively involve employees

  Safety discussions provide employees with immediate feedback. Encourage your employees to think about safety, to come up with ideas and suggestions for preventing accidents and minimizing the hazards with which they are most familiar.

- Showcase good safety practices

  Small-group meetings are the best place to demonstrate uses

of protective equipment, proper lifting techniques, and other specific safety procedures.

- Help eliminate safety hazards

  A section safety meeting is the place to identify and eliminate minor hazards before they result in accidents. It presents employees with an opportunity to discuss hazards inherent in their work environment.

- Introduce workers to new safety rules, equipment, and preventive practices

  In addition to introducing new safety measures, a safety meeting is a good place to remind employees of the reasons behind longstanding safety measures.

- Provide vital information

  Regular meetings are the best way to keep employees up to date on workplace hazards and what the division is doing about them.

Safety Meeting Requirements

Safety meeting requirements are detailed in WP 12-1, WIPP Safety Manual. Managers and supervisors whose employees work in high-risk areas are required to hold safety meetings at least once a month. Fewer meetings are required for employees who work in other areas. Certain topics are required to be addressed at least once a year:

- Emergency action
- Off-the-job safety
- Office safety (if you and your employees work primarily in an office environment)

Whenever you conduct a safety meeting, it is important to properly document the meeting on WP Form 1408, "Safety Meeting Report." Safety issues identified by employees can be recorded on the form. Management can use the form to track issues raised during the safety meeting. Keep a copy available for review by auditors.

Choosing a Subject

Pick a subject that is applicable to the work of your employees

or is of particular interest to them. For example, timely topics could include a recent accident or the safe operating practices for a new piece of equipment.

The Industrial Safety Section has more than 100 videos available for use in safety meetings. Many of these include a written presentation guide. The presentation guide includes questions for discussion following presentation of the video.
Other suggestions for meeting topics:

- Vehicles and tools

  Safe operating practices, safety features, required personal protective gear. This could include vehicles or office equipment.

- Injury statistics

  An unusual number of injuries in one area. Injury causes and solutions. Look for trends in reports of accidents, injuries, and near misses (both recordable and non-recordable). If the trend is unfavorable, have your employees discuss what can be done in their area to reverse the trend. If the trend is favorable, have your employees discuss what is being done to contribute to the trend.

- Adverse weather conditions

  Walking, working, and driving surfaces. Heat stress, hypothermia. Vehicle condition. Appropriate dress.

- Lessons learned

  Safety notices. Incident reports. Experience within your section.

- National campaigns

  -National Safety Week
  -Fire Protection Week

- Off-the-job activities

  Hunting, hiking, boating. Poisonous plants and insects. Fire safety. Lawn mower safety. Jump-starting a car.

Industrial Safety also has a variety of safety brochures and pamphlets. Call for information on what is available.

Preparation and Planning

The effectiveness of a safety meeting depends largely on your efforts. Prepare carefully.

Variety is important. Employees quickly become bored by meetings that are carbon copies of each other. When leading a safety meeting, it is up to you to ensure that the:

- Interest of your employees is aroused and held
- Information and ideas do not overload your employees
- Physical comfort of your employees is adequate
- Emotional atmosphere of the meeting is friendly

Your employees should leave the meeting with an improved attitude and an improved awareness of safety issues.

Here are some good practices to follow in preparing for your meeting:

- Gather your resources

  Consider how the topic could be covered best. Is a video available on the topic? Are there handouts or brochures for those attending to keep for reference?

- Write down your agenda

  Use your written agenda as a guide. Outline what you intend to accomplish in terms of changed behavior or attitudes. Try to anticipate your employees' questions and reactions.

- Set a time limit

  Keep the meeting short and simple, no longer than 30 minutes. Tell your employees how long the meeting is going to last. If the meeting is scheduled for a specific length of time, your employees are more likely to pay attention because they know that the meeting will not continue indefinitely.

- Plan your delivery

  Consider how your employees will interpret your manner of presentation. Convey your sincerity and interest through your stance, gestures, and tone of voice.

- Devise discussion questions

Questions should require more than a yes-or-no answer. Get employees involved. Prepare some thought-provoking comments that will generate discussion. For example, "Do you think this method will work?" is a yes-or-no question. "What is it that makes this method work?" requires analytical thought.

- Reserve equipment and facilities early

  If you plan to show a video, make sure the presentation equipment will be available. If you plan to use a conference room, reserve the room in advance.

Good Practices for Conducting a Safety Meeting

If you've been thorough in your preparation, the meeting will practically run itself. If you are not in the habit of conducting safety meetings, the task may cause anxiety. Experience, however, usually lays fears to rest.

Here are some good practices for conducting a safety meeting:

- Introduce the topic

  Tell the group in simple terms what the meeting is about. Say what points will be made.

- Present the facts

  If background information is necessary, be concise in presenting this information to your employees. Next present facts and figures.

- Demonstrate your points

  Role playing a safety procedure is one way to make sure your message is received. Using visual aids also helps. Any means of involving your employees adds impact to your meeting.

- Open the meeting for discussion

  Use the discussion period to answer questions, clarify misunderstandings, and obtain feedback from employees. An active discussion is usually a good indication that your meeting has been successful. If appropriate, present a case study per MAS-122, Plant and Industry Experience.

- Summarize major points

  In closing, recap what has been discussed and decided. If the group has agreed to steps to correct a hazard or improve an

unsafe condition, remind your employees of the steps they have agreed on.

Safety Meeting Practices to Avoid

- Lack of an agenda

  Don't try to "wing" it. If you depend on memory to get your meeting underway, you may suddenly find yourself in front of your employees with absolutely nothing to say.

- Addressing too many subjects

  Plan to address one primary subject. Do not address more than three subjects in any one safety meeting.

- Skipping the discussion

  Discussion demonstrates your employees' understanding. It is not enough to show a video or distribute handouts. Feedback is important for improving safety awareness. To stimulate discussion, ask open-ended questions.

- Procrastinating

  Haste in preparation will be evident to the audience. Your employees deserve better. So does your customer.

- Allowing interruptions

  A safety meeting should be a closed-door gathering. Don't conduct a safety presentation in a setting where your employees can be interrupted or distracted.

CRITICAL INCIDENT
EFFECTIVE BEHAVIOR

Occurrence: A section manager encouraged his employees to volunteer to speak at safety meetings on a topic of their choosing. Each presentation lasted 15-20 minutes. Participation was open to all employees in the section.

Impact: This approach added interest, variety and enthusiasm to the monthly safety meetings.

Lesson learned: Variety and employee participation can improve the quality of periodic safety meetings.

P. MONITORING THE SAFETY PROGRAM

Enabling Objectives

Upon completion of this section, the trainee will be able to perform the following:

1. Identify methods for monitoring the WID safety program.
2. Given a scenario, evaluate the manager's knowledge of how the WID safety program is monitored.

Many methods are used for monitoring the effectiveness of the safety program.

All buildings, including temporary buildings, are inspected periodically for fire safety and housekeeping by personnel in Industrial Safety or Emergency Management. Discrepancies are reported to the building landlord for correction.

Industrial Safety performs WP 12-132, "Internal Review of the Industrial Safety Program." The internal review assesses the adequacy and effectiveness of the safety program.

Primary monitoring is performed by safety committees, which perform the following among other duties:

- Report unsafe conditions and practices
- Review and modify work practices and hazard controls
- Analyze federal, state, and local regulations for applicability

Safety and Security Committee

This committee is comprised of a cross-section of WIPP personnel. The Manager, Industrial Safety, and the Manager, Security, co-chair. The meetings provide a forum for identifying and resolving safety and security concerns.

Operations Safety and Communications Committee

The purpose of this committee is to address the concerns of non-supervisory Operations personnel in an open-discussion forum. The chair is appointed by the Assistant General Manager, Operations.

ALARA and Chemical Exposure Committee

This committee provides guidance to WID management on ways to keep personnel radiation doses and hazardous chemical exposures ALARA. The committee, which is coordinated by the Safety Analysis and Review Team Leader, consists primarily of personnel from various disciplines. Functions include setting ALARA goals and performing ALARA reviews for significant projects. For details, see MAS-124, Radiological Protection.

The Executive Safety Council

Chaired by the Deputy Project Manager, DOE WIPP Project Site Office, the council resolves any issues left outstanding by the other committees. Members include senior managers from the WID and from Sandia National Laboratories.

Management Overview Tours

Constructive criticism can come from management overview tours administered by the Operations Self Assessment Section. These tours bring a manager from one area into an area outside his or her expertise. The idea is that someone with a fresh perspective will spot items of concern, including safety items, that were overlooked by the manager who works there.

Employee Safety Concerns

Employee safety concerns can provide feedback on the effectiveness of the safety program. Encourage your employees to voice safety concerns to you. If your efforts do not satisfy the employee's concern, the employee can go over your head without fear of reprisal to the next level of management. The issue can be escalated by the employee through the management chain to the level necessary for resolution.

It is important to address employee safety concerns in a professional manner. Provide honest and complete answers; convey accurate information. If a worker shows concern about exposure to a hazard, simply telling the employee not to worry can intensify the problem. Being honest and forthright about hazards enhances

management's credibility. If you don't know the answer to an employee's question, find out and promptly get back to him or her. It is easier and more efficient for you to resolve an employee concern than it is for your boss -- or your boss's boss -- to resolve the concern.

Other avenues for expressing safety concerns are also available to the employee. These include the use of safety committees, the hot line telephone system (dial TALK; 8255), and the Employee Safety/Health Concern Forms. The forms are available in the foyer of the Support Building and at several other locations on site. Concerns, suggestions, or complaints about safety may be reported on the form. An employee who signs the form should receive a written response within 10 working days.

An employee who does not receive a satisfactory response through WID channels may opt to report his or her concern directly to the DOE using Form 5480.4, "Occupational Safety or Health Complaint." Copies of the form can be obtained from Human Resources or from the site DOE safety representative.

Q. SAFETY GOALS

Enabling Objectives

Upon completion of this section, the trainee will be able to perform the following:

1. Identify good practices for meeting safety goals.
2. Given a scenario, evaluate the manager's effectiveness concerning safety goals.

When the objective is to maintain or reduce the number of reportable incidents, how should you proceed? Incidents usually occur at random. There is no accurate way to predict when or where an incident will occur. There are ways, however, to eliminate or to control hazards. The occurrence of injuries correlates to the existence of potentially injurious situations, particularly those involving unsafe acts. If the site goal is to maintain the number of incidents at the present level, your goal would be to maintain or reduce the likelihood of unsafe acts. If the site goal is to reduce reportable incidents, your goal would be to seek out and mitigate unsafe acts in your areas of responsibility. Studies quoted by the Department of Labor show that on average, one serious injury will occur for every 100 minor injuries or every 500 unsafe acts.

How to Achieve Safety Objectives

Safety programs will not work without your leadership. Listed below are good leadership practices, some of which are detailed in the preceding sections:

- Visibly emphasize safety in your own activities

  If employees can see the emphasis that you put on safety, they are more likely to emphasize safety in their own activities. Actions speak louder than words. If you see a hazardous condition or act, personally stop the activity until the hazard can be corrected or controlled.

- Be scrupulous in following safe work practices to provide an example that employees will emulate

- If your area has an excellent safety record, recognize your employees for their good work

  In a safety meeting, discuss with your employees the strengths of their safety program. Have them tell you what it is about their program that works so well. Ask how they think it could be improved.

- If you are responsible for a subcontract, ensure the subcontract employees have the same safety and health protection as your employees

  You cannot expect your commitment to safety to be taken seriously if you set one standard for your employees and another for subcontract employees.

- Set a goal for performing JHAs in your area

  Completing or updating one JHA per month, for example.

- If you have managers or supervisors reporting to you, ensure that their safety goals are spelled out in writing

  Typical goals would be to ensure that:

  -Safe work practices are followed
  -Good housekeeping is maintained
  -Employees accept safety as a personal responsibility
  -Employees comply with all safety policies and procedures

  Use these goals in performance discussions with each manager or supervisor.

- Actively discourage short cuts that defeat safety features or safe practices

- Learn or refresh the knowledge and skill needed to recognize hazards such as improperly functioning tools or equipment

- In evaluating employee performance, emphasize the importance of the employee's use of safe work methods and safe behavior

- Actively participate in safety program activities

- Encourage your employees to make safety recommendations

  Make sure your employees are aware of methods available to them for reporting safety concerns. These are listed in the "Monitoring the Safety Program" section of this module.

- Follow up on safety recommendations made by employees

- Provide all necessary safety and personal protective gear

  See that your employees understand how to properly use protective gear.

- Ensure that your employees are trained to recognize, understand, and guard against hazards

  Instructions on how to guide training activities are found in MAS-129, Training and Qualification of Personnel.

- At safety meetings, discuss progress toward WID total quality goals

An excellent place to start is with the "Smart Moves -- What You Can Do Now" section of this module. For further details on leadership skills, see MAS-103, Leadership.

R. SMART MOVES--WHAT YOU CAN DO NOW

Here are some things you can do now to make your section/department more effective:

- If you are not a landlord, help the landlord by assuming responsibility for housekeeping in your work areas (*page 16*)
- Ensure that your employees know the location and purpose of any fire suppression equipment or fire suppression design features in their work areas (*page 18*)
- Look out for potential hazards on your next walk through your spaces (*page 24*)
- Watch for unsafe behavior (*page 25*)
- Accentuate the positive to respond to unsafe behavior (*page 26*)
- Analyze routine jobs for hazards (*page 37*)
- Enforce rules for good housekeeping (*page 50*)
- If you conduct safety meetings, make plans now to improve your next one (*page 55*)
- Provide good leadership in working toward safety goals and objectives (*page 64*)
- Encourage your employees to:

  -Report near accidents (*page 24*)
  -Report even slight on-the-job injuries (*page 32*)
  -Voice safety concerns (*page 62*)

S. MODULE REFERENCES

WP 12-1, WIPP Safety Manual

MAS-123 Industrial Safety, MAST Module, Westinghouse Environmental Management Company

Safety and Health Material Resources, booklet for managers and supervisors, Occupational Health and Safety, Westinghouse Hanford Company, January 1992

National Safety Council Supervisors' Safety Manual, 7th Edition, ISBN 0-87912-151-3

National Safety Council Accident Prevention Manual for Industrial Operations, 9th Edition, ISBN 0-87912-135-1

WP 12-107 "Hazard Communication Program"

MAS-116 Purchasing and Accounting

DOE 5480.4 "Environmental Protection, Safety, and Health Protection Standards"

DOE 5480.7A, "Fire Protection"

DOE 5480.8, "Contractor Occupational Medical Program"

DOE 5480.9, "Construction Safety and Health Program"

DOE 5480.10, "Contractor Industrial Hygiene Program"

DOE 5483.1A "Occupational Safety and Health Program for DOE Contractor Employees at Government-Owned Contractor-Operated Facilities"

DOE 5484.1 "Environmental Protection, Safety, and Health Protection Information Reporting Requirements"

T. PRACTICE TEST

1. The WIPP must meet **mine** safety and health requirements of which of the following?

   a. MSHA, New Mexico, and the Eddy County Bureau of Mines

   b. MSHA only

   c. New Mexico only

   d. MSHA and New Mexico

   (B.1)

2. An ashen-faced site employee slumps down in a chair, complaining of chest pain to his supervisor. The supervisor immediately calls the first aid station to describe the symptoms. Is this a good practice? Why?

   a. YES -- calling the first aid station is the recommended way to obtain first aid

   b. YES -- whoever answers the phone at the first aid station is the proper person to determine whether the ambulance needs to be dispatched

   c. NO -- if an on-site injury or illness is serious, the CMR should be called immediately

   d. NO -- if an on-site injury or illness is serious, the cognizant manager should take the employee to the hospital emergency room

   (I.5)

3. Indirect costs of an accident usually are

   a. greater than the direct costs of an accident.

   b. less than the direct costs of an accident.

   c. about the same as the direct costs of an accident.

   (C.2)

4. A manager tells his employees, "Our building is due to be inspected next week. If a deficiency is found in our area, the building landlord will see that the deficiency is corrected." Is this statement correct? Why?

   a. YES -- the landlord is responsible for ensuring that audit shortcomings and inspection deficiencies are corrected in a timely manner

   b. NO -- the party who inspects the building is responsible for seeing that deficiencies are corrected in a timely manner

   c. NO -- if a building inspector finds a deficiency in a WIPP structure, Industrial Safety is responsible for correcting the deficiency in a timely manner

   d. NO -- if a building inspector finds a deficiency in your area, it is up to you -- not the landlord, not Industrial Safety -- to correct the deficiency in a timely manner

   (E.1)

5. A supervisor looks for potential hazards during special tours of her work spaces twice a month. Is this a good practice? Why?

   a. YES -- this is a recommended way of identifying potential hazards

   b. YES -- supervisors are required to make such tours at least once a month

   c. NO -- identifying potential hazards is up to Industrial Safety personnel, not the individual supervisor

   d. NO -- looking for hazards should not be part of a special tour; it should be part of walking your spaces

   (H.3)

6. During a tour, a visitor to the WIPP site stumbles and falls, breaking a finger. The tour supervisor calls the CMR and escorts the visitor to the first aid station. Is this a good practice? Why?

   a. YES -- the statement releasing WID from liability that visitors sign before entering the site does not apply to accidents

   b. YES -- a visitor who suffers an injury should receive the same attention as an injured employee

   c. NO -- the visitor should be escorted to the parking lot and advised to consult his or her physician

   d. NO -- the supervisor should escort the visitor to the company physician's office

   (I.3)

7. An office employee volunteers to repair a frayed lamp cord with a pocket knife. His manager replies, "Thanks for bringing that to my attention, but it really needs to be repaired by Maintenance." Is this a good practice? Why?

   a. YES -- defective electrical gear should not be used, nor should it be tampered with

   b. NO -- removable appliances such as lamps do not have to be repaired by qualified personnel

   c. NO -- lighting appliances, if 125 volts or less, do not have to be repaired by qualified personnel

   (K.1)

8. A supervisor finds a stack of newly received boxes restricting the doorway to a work area used by her employees. She has her employees rearrange the boxes in the hall to open the passageway until the boxes can be properly stored. Is this a good practice? Why?

   a. YES -- for fire protection purposes, boxes should be stacked in hallways and on stairs, not in work areas

   b. YES -- it is good housekeeping to keep access open to exits

   c. NO -- stacking the boxes in the doorway is a good way to remind employees to properly store the boxes; the blockage demands attention

   d. NO -- as long as the boxes will be properly stored sometime that day, there is no need to rearrange them

   (M.1)

9. A manager prepares a safety meeting that will apply month in and month out. Once the presentation is debugged, the manager intends to use the same presentation every month. Is this a good practice? Why?

   a. YES -- employees learn best from an oft-repeated safety meeting

   b. YES -- once this presentation is debugged, the manager will not need to spend as much time preparing for safety meetings

   c. NO -- employees quickly become bored by meetings that are carbon copies of each other

   d. NO -- Industrial Safety prepares safety meetings for managers

   (O.3)

10. Issues left outstanding by the safety committees are resolved by the

    a. ALARA and Chemical Exposure Committee

    b. Operations Safety and Communications Committee

    c. Safety and Security Committee

    d. Executive Safety Council

    (P.2)

U. ANSWERS AND FEEDBACK FOR THE PRACTICE TEST

1. d. MSHA and New Mexico

2. c. NO -- if an on-site injury or illness is serious, the CMR should be called immediately

3. a. greater than the direct costs of an accident

4. a. YES -- the landlord is responsible for ensuring that audit shortcomings and inspection deficiencies are corrected in a timely manner

5. d. NO -- looking for hazards should not be part of a special tour; it should be part of walking your spaces

6. b. YES -- a visitor who suffers an injury should receive the same attention as an injured employee

7. a. YES -- defective electrical gear should not be used, nor should it be tampered with

8. b. YES -- it is good housekeeping to keep access open to exits

9. c. NO -- employees quickly become bored by meetings that are carbon copies of each other

10. d. Executive Safety Council

If you scored 80 percent or higher on the practice test, you are ready to take the module examination; please proceed to Human Resources Development and Total Quality.

If you scored less than 80 percent on the practice test, please re-read the module and take the practice test again. If you still have questions, contact the Team Leader, Professional Development or the Manager, Human Resources Development and Total Quality.

V. APPENDIX

Note: The appendix is provided for information only; it is not used as a source for examination questions.

Workplace Safety Inspection Checklist Examples

Attachment 3 to the WIPP Safety Manual lists "WIPP Guidelines for Safety Inspections." Many checklist items represent potential hazards that you can watch for when walking your spaces. Here are some examples:

- Work areas, passageways, and stairs free from debris
- Containers provided for the separation of and collection of waste, trash, oily/used rags
- Nails projecting from scrap lumber either removed or bent down
- Oil/grease removed from walking/working surfaces
- Lighting adequate
- If eyes/body may be exposed to injurious corrosive materials, facilities such as eyewash or portable shower are provided
- Personnel protective equipment provided as needed to protect head, hearing, face, eye, feet, and body
- Fire alarm reporting instructions conspicuously posted
- "No Smoking" signs posted in flammable storage areas or refueling areas
- Combustibles stored in piles not higher than 12 feet
- Procedure in place for the regular clean up of storage areas
- If extinguishers are provided, access to extinguishers is clear of obstacles
- Combustible material stored not closer than 10 feet from a structure
- Flammable liquids (five gallons or less) transported and

stored in approved safety containers

- Appropriate personal protective equipment warning signs posted
- Power hand tools either double-insulated or properly grounded
- If a temporary light is used, the light is not suspended by its cord
- Electrical outlet boxes covered
- If a portable ladder is in use, the ladder is tied, blocked, or otherwise secured to prevent displacement
- No material is stored underneath an open staircase
- Stairway lighting adequate
- Exit signs in place
- Exit capabilities unaffected by indoor storage
- Clearance adequate between and around lights and heating units
- Material not stored within 36 inches of a fire door opening
- Fire protection sprinkler system valves and gauges accessible